

III. REMARKS

The Response under 37 C.F.R. § 1.111 previously filed on November 13, 2007 is herein incorporated by reference in its entirety except to the extent that the November 13 response is deemed to conflict with the present Supplemental Response in which case Applicants request that the Office look to the present document for Applicants' response. The present Supplemental Response is supplemental to the November 13 Response for example with respect to sections entitled "Priority" and "Rejections under 35 U.S.C. § 102".

With respect to the claims, Applicants presume that the claim amendments filed on November 13, 2007 are entered prior to submission of the present Supplemental Amendment, which Supplemental Amendment shows claim amendments relative to the claims as presented in the Response filed November 13, 2007. By the present Supplemental Amendment, claims 2, 7, 12, and 24 are currently further amended. Claims 60 and 61 have been added. Claims 1, 3-5, 9-11, 15-18, 22, 23, 27-31, and 39-59 have been cancelled. Claims 6, 8, 13, 14, 20, 21, 25, and 38 are original, and claims 19, 26, and 32-37 have been previously presented. Support for the present amendments may be found, for example, in the original claims, sequence listing and specification for example at page 30, lines 21-22.

Priority

The Office Action mailed July 11, 2007 requested that Applicants disclose the sequence identifiers in the priority applications which are identical to SEQ ID NO: 5272 of the instant application. Office Action at page 3. In their Response dated November 13, Applicants noted that sequences identical to SEQ ID NO: 5272 of the instant application were first disclosed as SEQ

ID NO: 22273 in U.S. Application No. 60/139,932, filed June 21, 1999, as SEQ ID NO: 42735 in U.S. Application No. 60/143,994, filed July 15, 1999, and as SEQ ID NO: 9911 in U.S. Application No. 60/155,422, filed September 23, 1999.

Applicants clarify that SEQ ID NO: 5272 of the instant application is identical to SEQ ID NO: 22273 of U.S. Application No. 60/139,932, filed June 21, 1999 and SEQ ID NO: 42735 of U.S. Application No. 60/143,994, filed July 15, 1999, from base pairs 2012 through 3941 of SEQ ID NO: 5272 as shown on the attached alignments. *See* Attachments A and B. SEQ ID NO: 5272 of the instant application is identical to SEQ ID NO: 9911 of U.S. Application No. 60/155,422, filed September 23, 1999, from base pairs 1 to 3941 of SEQ ID NO: 5272. *See* Attachment C.

Rejections under 35 U.S.C. § 102:

Claims 2, 6 to 8, 27 and 28 were rejected under 35 U.S.C. § 102(a) as allegedly being anticipated by GenBank Accession No. AP000604. Office Action at page 19. As stated in the Response dated November 13, 2007, Applicants respectfully traverse this rejection.

In their November 13 Response, Applicants stated that "... whatever else GenBank Accession Number AP000604 teaches, it does not disclose SEQ ID NO: 5272 or the complement thereof." *See* Response under 37 C.F.R. § 1.111 filed November 13, 2007 at page 18. Upon additional review, Applicants wish to clarify that GenBank Accession Number AP000604 does not teach or disclose SEQ ID NO: 5272 or a complete complement that is 100% identical over the full length of SEQ ID NO: 5272. Applicants wish to bring to the Examiner's attention the definition of "complement" set forth within the specification at page 21. Specifically, that "[t]he

nucleic acid molecules of the present invention ... also include molecules that, although capable of specifically hybridizing with the nucleic acid molecules may lack ‘complete complementarity’.” Indeed, “... molecules are said to be ‘complementary’ if they can hybridize to one another with sufficient stability to permit them to remain annealed to one another under conventional ‘high-stringency’ conditions.” See Specification at page 10.

Moreover, Applicants wish to bring to the Examiner’s attention that the currently amended and newly added claims do not recite or require a complete complement over 100% of the full length of SEQ ID NO: 5272. Indeed, the claims have been amended to clarify that the nucleic acid molecule comprises from about 30 to about 300 nucleotide residues of SEQ ID NO: 5272 or complements, *i.e.*, that the nucleic acid molecule comprises at least about 30 nucleotide residues from SEQ ID NO: 5272 or its complement.

In addition, Applicants note that their November 13 Response stated that “[o]ne of ordinary skill in the art would not reasonably interpret a sequence complementary to SEQ ID NO: 5272 at merely a particular segment of SEQ ID NO: 5272, as identical to for example, SEQ ID NO: 5272 or its complement...” See Response under 37 C.F.R. § 1.111 filed November 13, 2007 at page 19. As above, Applicants wish to clarify that one of ordinary skill in the art would not reasonably interpret a sequence complementary to SEQ ID NO: 5272 at merely a particular segment of SEQ ID NO: 5272, as identical to for example, SEQ ID NO: 5272 or its complete complement that is 100% identical over the full length of SEQ ID NO: 5272.

With respect to GenBank Accession No. AP000604 (NCBI website October 15, 1999), Applicants respectfully point out that the priority date of the captioned application precedes the

stated NCBI date. For example, as discussed above in the section entitled "Priority", SEQ ID NO: 5272 of the instant application is identical to SEQ ID NO: 22273 of U.S. Application No. 60/139,932, filed June 21, 1999, from base pairs 2012 through 3941 of SEQ ID NO: 5272. As such, Applicants are entitled to a priority date of at least June 21, 1999 or earlier. Accordingly, AP000604 (NCBI website October 15, 1999) could not have been known or used before invention by applicants. 35 U.S.C. § 102(a).

Based on the foregoing, Applicants respectfully submit that GenBank Accession Number AP000604 cannot be anticipatory.

Likewise with respect to the Brennan reference (U.S. Patent No. 5,474,796), Applicants, in their November 13 Response, stated that "[o]ne of ordinary skill in the art would not consider a sequence of 10 nucleotides as identical to, for example, SEQ ID NO: 5272, or its complement, both of which are 3941 bases in length." See Applicants' November 13, 2007 Response. What was meant by such a statement was that one of ordinary skill in the art would not consider a sequence of 10 nucleotides as identical to, for example, SEQ ID NO: 5272 or its complete complement that is 100% identical over the full length of SEQ ID NO: 5272.

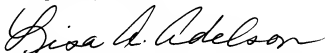
The presently pending claims recite a nucleic acid comprising from about 30 to 300 base pairs of SEQ ID NO: 5272 or complements. Whatever else Brennan may teach or suggest, it does not teach or suggest a nucleic acid comprising from about 30 to 300 nucleotide residues of SEQ ID NO: 5272 or complements, *i.e.*, Brennan does not teach or suggest a nucleic acid comprising at least about 30 nucleotide residues. As such, Applicants respectfully submit that the presently pending claims are not anticipated by Brennan.

Based on the foregoing, Applicants request withdrawal of the remaining rejections under 35 U.S.C § 102, Anticipation.

IV. CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that the present application is now in condition for allowance, and respectfully request notice of such. The Examiner is encouraged to contact the undersigned at 202-942-5325 if any additional information is necessary for allowance.

Respectfully submitted,



Date: January 3, 2008

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ATTACHMENT A

SEQ ID NO: 5272
CCTCCAATGAAATATATATCACTGCCAATTGTACATTGAGTGTGGAGTGGATAAGTAATAAGAGACAAA
70

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 70

SEQ ID NO: 5272
CAATCATCCCAAGTATTGGTAACTTGAAGGCACAAGTTTGAACAAACCTTATGTTCTGCATTCTA
140

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 140

SEQ ID NO: 5272
AAATAGTGAAAGTTTCCCATCTGCTCTGAAGGCCCGTGC GG GTGCTTTGNNNNNNNNNNNNNNNNNNNN
210

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 210

SEQ ID NO: 5272
NNNNNNATCAATCCACAACCAGAGATATTACGAGCCATTACTCAGACATACAGATGTTTGGCTGGTGAGA
280

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 280

SEQ ID NO: 5272
TTCATGCATCGACAACCATAGATTGAAAAGGAAAAATGTAAGTAGACACCCACCTGTTTCATCCTCTGACA
350

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 350

SEQ ID NO: 5272
ATGGGTACACATCACCAATAATGTCACTCTTGCATTGATAAGCCACTCCATCCGGGTATCTGCCAGCC
420

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 420

SEQ ID NO: 5272
AAATCAACGGTTACATAACATAAAGGGTAAACCTTTTGCTCGTATAATTTAAACACAATAGCCAATGTTA
490
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 490

SEQ ID NO: 5272
CCTGAACACAACAGGCTGCATCTAGGTTCAATCAAGAGATTTCGTGTGTGGATGGCCAGCGGTCAAAACAA
560
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 560

SEQ ID NO: 5272
AAATATTGGATCTGATAAGAAAAAGTAGAAGCAATTCAGAAGTAAGCATCTATTATATCTCAACCACTA
630
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 630

SEQ ID NO: 5272
GACTCAAAACATTAATTTGTACCATTATAATTTGGTATTGCCTTCAATACACAGACACAAAAACACTCCTA
700
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 700

SEQ ID NO: 5272
CATGTACACCTCTAATGAAATTTAAGGAAAAGAGGGAAAAAACCGCTTTGACTTCACTTCTACTATTTCG
770
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 770

SEQ ID NO: 5272
TTCCCAAAAAATCAAATCAAGTTAAGTTTTTACAGTTAGAGGAGTTATGACTAAGAACCAATTGTTCGAC
840

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 840

SEQ ID NO: 5272
TGGCAAATAATTAAACTCATACTCTGAGAAAAAATTGAGCGTGCAACAAAGAAGACACTGTAGAACTAG
910

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 910

SEQ ID NO: 5272
GAGCAGTCAACAAAGAAAGATAGACTCAGTGACTTACGCCCATCCGATCAGGTGCAAAATCTACCAATG
980

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 980

SEQ ID NO: 5272
AGCCAAATGGGTACCCTTCCTGCGGTGGTGCAATTTGGACATCACTGTGCACAGATGAGCAAACTAGC
1050

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1050

SEQ ID NO: 5272
CTTGAATCATAAAACACACAAGACAAGACAGATAAAGAACTTAAATAATCTTTTCTCATTGAAGTAA
1120

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1120

SEQ ID NO: 5272
AAGGAAGAATACAAACCATCTAAAGGACAAACCCCTTTTACCTGTTCCAACAAGTTCGTACAGCTAAAGC
1190

SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1190

SEQ ID NO: 5272
AGGCCGAGGTAAGCATGAGCTGATGTAGCATTTTGAACACCACCAGATATTGGAGTTCATAAAAGCCCA
1260
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1260

SEQ ID NO: 5272
GCTCGATTTCCTCCACCACCTGAGGATGTGCAAGAGATGCCTCCACATCGATTACACTATGAGAAGTTT
1330
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1330

SEQ ID NO: 5272
CACCATTGCTATTACTCCCGAGCTTTCTCTCACACAACATTACAAGCTATTAATCTCTATGTCAAAGCA
1400
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1400

SEQ ID NO: 5272
AACCATTACGTGGTATCATCTTTCGCTAATCTAAGATTTCGATTCTACACAACTCTGCATCAAAACCA
1470
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1470

SEQ ID NO: 5272
AGTTTGTGTCCAAAATTGTAATCTTTTGCTGAATTTTGCATACCCAAAACAAAAGTTATAATCTTTAG
1540
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1540

SEQ ID NO: 5272
TTGAATTTATTATCACAAGACAAGAGAAAAAGTACCTGTGATAAAGAGAAGATATCCCAGGAAAAAAA
1610
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1610

SEQ ID NO: 5272
CCAAACCCATTATTATCTTCACCTTCACTTGGCGTCTCGTTACGTAAGAGAGCTTGTATACGAAGCCCGT
1680
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1680

SEQ ID NO: 5272
GACTTGATCCATTACTGAGTCTCAGCTTCGGGAATTGCGTTTTGGGTAGCGAATTACAAAACCAACACGA
1750
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1750

SEQ ID NO: 5272
AGACTGGGATGAAGTGGGCAGCGGAGATTTGAGGAGAGGCTTAGTCTGTAAATTGGGTGTGTGTGTTGAA
1820
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1820

SEQ ID NO: 5272
GTGAAGAGAGAGCTTCATGGTGGATGAGAATAAGATTTGGGTGAAGAGTCTTCTGATCTTTCACTATGGC
1890
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1890

SEQ ID NO: 5272
AGATGCTTCAGGCGTCTTTGTGAAAGTAGCTTTAGGAATTAGGACTTTTCAGAGTAGGGTTGTATA
1960
SEQ ID NO: 22273 -----
----- 0

Consensus
..... 1960

SEQ ID NO: 5272
CACACACATACATATAAGGGTTTTTCTTTTTCTTTTGGCTTTTTTTTTTATA[REDACTED]C[REDACTED]CTT
2030

GGG CCG 19

Consensus GTT
GGATTACGATTACT.. 2030

SEQ ID NO: 5272
2100
SEQ ID NO: 22273
89

Consensus
TGTCTTCGGAATTACFTTTGATCTATTTCTATTCTCTTTGTTTGTTTGATGTTGATAATAACGAA
2100

SEQ ID NO: 5272
CCGA
2170
SEQ ID NO: 22273
CCTG
159

Consensus
TTTTCCTT..AATAAGAAATCTCTTCTTTTAAATTTACAATTTTATTGATAATAACATAATATTCTA
2170

SEQ ID NO: 5272
2240
SEQ ID NO: 22273
229

Consensus
AGAAAATTATCTTTGTTTAAAAAATTGGGAAAGAAAAGATTTCATCTCATCTCAAAAGAACCTGATAAT
2240

SEQ ID NO: 5272
 2310
 SEQ ID NO: 22273
 299

Consensus
GACTATTGGATTACCATTATTTCCTTTCTAAAATCTCTTACTGTTGATTAAAAAATTAAATCTCCTCT
2310

[REDACTED] C [REDACTED] C [REDACTED] C [REDACTED] C [REDACTED] CC [REDACTED] G [REDACTED] A [REDACTED] A [REDACTED] CAAACAGT

SEO ID NO: 22273

AACCTGTTTTCAGCCTGGATCAAGAAGAA

AAAGAAAATATCTATCATCTCAATTGGTTCAGACCATTTTAAATTTACGTTGAAAAGAAAGATCAAACAGA

CC

SEQ ID NO: 22273

TCAATGACACAACTATAATTAAAGGCACCTAAACACTAAATGTCCTAATTTGCATAATGCGGGACCCATGT

[REDACTED]

SEO ID NO: 22273

CONFIDENTIAL

CAATAAATATTTCTCAAACGTTCTCGTTTTTCAGCCCATCCTTCTCCGAATCCACGCGCCACCGTCTAAGC

SEO ID NO: 22273

TGCTGCGTCATTGCACGCGCCAAATTTGCTTTC AACCGCTCGAATCATCCCAGCTGAAACTCCAGTCACAT

[illegible]

2660

SEO ID NO: 22273

[illegible]

649

CTCTACTTTCTTTAAATTCGTGCACGTCTGTCTTAAACGCCGAACCAAAACGCCGCCGCTAAGAA
2660

2730

719

CACTCTCTTTGCTGCTCTTTGGGCTTGGTCTCCACAGCCAAAGCCAAAGACGCATATGAAACGACAGCGTTT
2730

2800

789

GTTAAATCCCTGTTTAGTCTTAAGTTAGCACCACTTTACAAAAATGCCATCCGCCACCGTAACCGCAA
2800

2870

859

CGGGCTTGGCATTCACTCTGTTTTCCTTCCTTCGGGCTCTGTTTACGTCACGCGTCGTTGACGATAGCTC
2870

2940

929

GGAGCTTGGAGACACAGTCAAGAGACAGAGCTAGCAAGAAAGACGACGATTCTGAACAACATGTTGTTCTGT
2940

3010

999

GGAGGCCAAGGAAGAAGAGGAC'AGAAA'GAAATTTTGAGTAAGAGATTTGCAATTTGGGCAAATGACAC

3080

1069

3080 GCCGGAATGACCTAGCGAAGAGAAAAATTTGAGGCATGGAACCTAGCGTCACAAGAACGGCAGAGGAAGGC

3150

1139

AGAGTCCGCGGCACAATGGAGATCAGCTTGGCACCAAAAGCTCGCAAAAGCTCACATTGAGTCGATC
3150

[REDACTED] [REDACTED]
[REDACTED]

3220

1209

3220 TCTCTGGATCACCAGAAAGAAATGAAGAGAAATTCGTTTG.AATGATGATGGTGGGAAGAGAGATTTAAG

3290

1279

GAAGACAIGTAAATGATTGAGGAGAGAGAAAGAGGCGTGGAGTTTTATGGTTCATGCTTGATGAGAGTAG
3290

[REDACTED]

SEQ ID NO: 22273

100-443887-1000

TCCTTCCACAGTTCACACATCAAAGAACTTACATGAGCCATAATTTTTTAGGGAAATGAAATGAATGC

_____ C _____ C _____ C _____ C _____

SEQ ID NO: 22273

TGTTTGTAGAAATTGGAGAGAAATGACGTGTCTGAGGTTTTGAGGCTGGTGAGATTATGTGGTCATTTTTTA

[REDACTED]

SEQ ID NO: 22273

[REDACTED]

AAACTATTACACTAGCCGCCAAGTCATTTCGTCTTCCCTTTTGGGTGTGACGTGGAGATTTAGTCAACACTAA

[REDACTED]

SEQ ID NO: 22273

TGTCCTTTTCAGAGACTTGGTCTTCATTGCAATTGCTTCTTCCTTTTCTTGGGTTGCTTCCATTACATT

[illegible]

SEQ ID NO: 22273

CONFIDENTIAL

Consensus

CTTCTGCAATGGTGCAGTCTTTATATAAACTTTTATACATGGATCTTTTGTGGAATACAAAACAGAAGA
3640

SEQ ID NO: 5272

3710

SEQ ID NO: 22273

1699

Consensus

TAATACCTTAATTATATAATCTAAGCACTAAGGATACAAAACACAAGGTGTAAACTGTGGTGAACCTGTT
3710

SEQ ID NO: 5272

3780

SEQ ID NO: 22273

1769

Consensus

TGGGTTCGATCCGAACCTAGTACAAACAATAGTCTATATCTTGAAATCTTTCCAAAAATGGTTTCCTAAAT
3780

SEQ ID NO: 5272

3850

SEQ ID NO: 22273

1839

Consensus

AAAATGCTCTTTGAATAGCCAATCTAAATCCAATAGCTCTGTTAAGATATATCCATAGAGCCCCCTCCTAC
3850

SEQ ID NO: 5272

3920

SEQ ID NO: 22273

1909

Consensus

GAATCAGACTGAGACTCTCCAGAGAGTTTACTTCTTTGGTATCCGACCATAATGCCTCTGGCGTATTC
3920

SEQ ID NO: 5272

SEQ ID NO: 22273

3941

1930

Consensus

TAAATGCGGNTTTCGTAGCA

3941

ATTACHMENT B

SEQ ID NO: 5272
CCTCCAATGAAATATATATCACTGCCAATTGTCACATTGAGTGTGGAGTGGATAAGTAATAAGAGACAAA
70

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 70

SEQ ID NO: 5272
CAATCATCCCACAAGTATTGGTAACCTGGAAGGCACAAGTTTGAACAAACCTTATGTTCTGCATTCTA
140

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 140

SEQ ID NO: 5272
AAATAGTGAAAGTTTCCCATGCTCTGAAGGCCCGTGCGGGTGCTTTGNNNNNNNNNNNNNNNNNNNN
210

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 210

SEQ ID NO: 5272
NNNNNNNATCAATCCACAACCAGAGATATTACGAGCCATTACTCAGACATACAGATGTTTGGCTGGTGAGA
280

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 280

SEQ ID NO: 5272
TTCATGCATCGACAACCATAGATTGAAAAGGAAAAATGTAAC TAGACACCCACCTGTTTCATCCTCTGACA
350

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 350

SEQ ID NO: 5272
ATGGGTACACATCACCAAAATATGTCACCTCTTGCAATTCGATAAGCCACTCCATCCGGGTATCTGCCAGCC
420

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 420

SEQ ID NO: 5272
AAATCAACGGTTACATAACATAAAGGGTAAACCTTTTGCTCGTATAATTTAAACACAATAGCCAATGTTA
490
SEQ ID NO: 42735 -----
----- 0

Consensus
..... 490

SEQ ID NO: 5272
CCTGAACAAACAAGGCTGCATCTAGGTTCAATTCAGAGATTTCGTGTGTGGATGGCCAGCGGTGAAAAACAA
560
SEQ ID NO: 42735 -----
----- 0

Consensus
..... 560

SEQ ID NO: 5272
AAATATTGGATCTGATAAGAAAAAGTAGAAGCAATTCAGAGAAATGAGCATCTATTATATCTCAACCAGTA
630
SEQ ID NO: 42735 -----
----- 0

Consensus
..... 630

SEQ ID NO: 5272
GACTCAAAACATTAAATTGTACCATTATAATTTGGTATTGCCTTCAATACACAGACACAAAAACACTCCTA
700
SEQ ID NO: 42735 -----
----- 0

Consensus
..... 700

SEQ ID NO: 5272
CATGTACACCTCTAATGAAATTAAAGGAAAAGAGGGAAAAAACCGCTTTGACTTCACTTCTACTATTTCG
770
SEQ ID NO: 42735 -----
----- 0

Consensus
..... 770

SEQ ID NO: 5272
TTCCCAAAAAATCAAATCAAGTTAAGTTTTTACAGTTAGAGGAGTTATGACTAAGAACAATTTGTCGAC
840

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 840

SEQ ID NO: 5272
TGGCAAATAATTAAACTCATACTCTGAGAAAAAATTGAGCGTGCAACAAAAGAAGACACTGTAGAACTAG
910

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 910

SEQ ID NO: 5272
GAGCAGTCAACAAAGAAAGATAGACTCAGTGACTTACGCCCCATCCGATCAGGTGCAAAATCTACCAATG
980

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 980

SEQ ID NO: 5272
AGCCAAATGGGTACCCCTTCCTGCGGTGGTGCATTTTGGACATCACTGTGCACAGATGAGCAAACTAGC
1050

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 1050

SEQ ID NO: 5272
CTTGAATCATAAAACACAACAAGACAAGACAGATAAAGAACTTAAATAATCTTTTCTCATTGAAGTAA
1120

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 1120

SEQ ID NO: 5272
AAGGAAGAATACAAACCCTCTAAAGGACAAACCCCTTTTACCTGTTCCAACAAGTTCGCTACAGCTAAAGC
1190

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 1190

SEQ ID NO: 5272
AGGCCGAGGTAAAGCATGAGCTGATGTAGCATTTTGAACACCACCAGATATTGGAGTTCTAAAAAGCCCA
1260

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 1260

SEQ ID NO: 5272
GCTCGATTTCCTCCACACCCCTGAGGATGTGCAAGAGATGCCTCCACATCGATTACACTATGAGAAGTTT
1330

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 1330

SEQ ID NO: 5272
CACCATTGCTATTACTCCCGAGCTTTTCCTTCACACAACATTACAAGCTATTAATCTCTATGTCAAAGCA
1400

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 1400

SEQ ID NO: 5272
AACCATTACGTGGTATCATCTTTCGGCTAATCTAAGATTCGATTCTACACAAACTCTGCATCAAAACCA
1470

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 1470

SEQ ID NO: 5272
AGTTTTGTGTCCAAAATTGTAATCTTTTGCTGAATTTTTCGCATACCCAAAACAAAAGTTATAATCTTTAG
1540

SEQ ID NO: 42735 -----
----- 0

Consensus
..... 1540

SEQ ID NO: 5272
TTGAATTTATTTCATCACAAGACAAGAGAAAAAGTACCTGTGATAAAGAGAAGATATCCCCAGGAAAAAA
1610

SEQ ID NO: 42735 -----
----- 0

GTTCGA CCGC GG 19

GGATTACGATTACT.. 2030

SEQ ID NO: 5272
CC C C C C C
2100

SEQ ID NO: 42735
CC C C C C C
89

2100

SEQ ID NO: 5272
CC GA
2170
SEQ ID NO: 42735
CC TG
159

TTTTCCTT...AATAAGAAAATCTCTTTCTTTTAAATTTACAATTTTATTGATAATAACATAATATTCTA
2170

SEQ ID NO: 5272
2240
SEQ ID NO: 42735
229

AGAAATTTATCTTTGTGTTAAAAAAATTGGGAAAGAAAAGATTTCATCTCATCTCAAAAGAACCTGATAAT

SEQ ID NO: 5272
 2310
 SEQ ID NO: 42735
 299

2310

(b) (7)(C), (b) (7)(D)

SEO ID NO: 42735

[REDACTED] C [REDACTED] C [REDACTED] C [REDACTED] C [REDACTED] CC [REDACTED] C [REDACTED] C [REDACTED] C

AAAGAAATATCTATCATCTCAATTGTTTCAGACCATTTTAAATTTACGTTGAAAAGAAAGATCAAACAGA

SEO ID NO: 42735

TCAATGACACAAACCTATAATTAAAGGCACTAAACACTAAATGTCCTAATTTGCATAATGCGGGACCCATGT

ccccc

SEO ID NO: 42735

CAATAATATTCTCAAACGTGTCCTTTTCAGCCCATCCTTCCTCCGAATCCACGCGCCACCGTCTAAGC

SEO ID NO: 42735

TGC"TGCGTCAT"TGACGGCCAA"TTTGCT"TTCAACCGCTCGAATCATCCCAGCTGAAACTCCAGTCACAT

SEO ID NO: 42735

CTCTCACTTCTTTAAATCTGCAAGTGTGCTGTCTTTAACGCCGAACCAAAACGCCGCGCTAAGAA
2660

2730

719

CACCTCTTCTGTCGGCTCTTGGGCTCTGCTCCACAGCTAAAGCCAAAGACGCATATGAAACGACAGCGTTT
2730

2800

789

GTAAATCCCTGTTAGTCTAAATTACACACCAATTTACAAAAATGCCATCCGCCAUCGTAACCGCAA

2870

859

CGCGCTTGGAATTCACTCGGTTTTCCTCCCTCGCGGTCGTGTTTACGTCACGCGTCGTTGACGATAGCTC
2870

2940

929

CGAGCTTGGAGACACAGTCAAGA TACGAGCAGCAAGAAAGACGACGATTCTGAACAACATGTTGTTCGT

3010

999

GGAGGUC AAGGAAGAAGACGGN TAT AAAACGAAATTTTGAGTAAGAGATTTCGAATTTGGGCAAATGACAC

3080

1069

3080 GCGCGAAATGACGAACCGAAGAGAAATTTGAGGCATGGAACTTAGCGTCACAAGAACGGCAGAGGAAGGC

3150

1139

AGAGTTCGCGGCACAATGGAGATACGCTTTCGACACACAAGCTCGCAAAAGCTACCATTTGASTCGATC

3220

1209

TTCTCTGGATCACCAGAAAGAAATTGACAGAAATTGGTTTG. AATGATGATGGTGGGAAGAGAGATTTAAG
3220

3290

1279

GAAGACATTTAAATGATTAAGGATGAGAAAGAGCGCTTGGAGTTTATGGTTCAAGTTGATGAGAGTAG
3290

CONFIDENTIAL

SEQ ID NO: 42735

14-00000

TCTCTTCCACAGTTCACACATCAAGAAACTTACATGAGCCATAATTTTTTAGCGAAATGAAATGAATGCG

[REDACTED] [REDACTED] [REDACTED] [REDACTED]

SEQ ID NO: 42735

C

TGTTTGTAGAAATTGGAGAGAAATGAGTGTGAGGTTTTGAGGCTGGTGAGATTATGTGTCATTTTTA

SEQ ID NO: 42735

CC BY-NC-ND 4.0 International license.

AAACTAATTACACTAGCCGCCAAGTCAATTCGTCTTCCTTTTGGTGTGACGTGGAGATTTAGTCAACACTAA

[illegible]

SEQ ID NO: 42735

1GTCTTTTCAGAGACTTGGTCTCATTTGCAAAATTGCTTCTTCTTTTCTTGGTTGCTTCCATTACATTT

CONFIDENTIAL

SEQ ID NO: 42735

C

CTTCGCGATTGTTGCAGTCPTTTATATAAACTTTTATACATTGATCTTTTGTCTGAATACAAAACAGAAGA
3640

3710

1699

3710

3780

1769

TGGGTTTCTGATCCGAAGTAGTAAGCAATAGTCTATATCTTGAAATCTTCCAAAAATGCTTCTTAAAT
3780

3850

1839

3850 AAAATGGTCTTTTGAATAGCAATCTAAATCCAATAGTCTGTGTTAAGATATATCCATAGAGCCCTCCTAC

3920

1909

GAATCGACCTGAGACCTCTCCAGAGAGGCTTACTTCTTTGGTATCCGACCATAATGCCTCTGGCGTATTC
3920

SEO ID NO: 42735

Consensus TAAATGCCGONTTGTAGCA 3941

ATTACHMENT C

[illegible]

SEQ ID NO: 9911

CO CC [REDACTED] CO CC [REDACTED] CO CC [REDACTED] CO CC [REDACTED]

CCTCCAATGAAATATATATCACTGCCAATTGTCACATTGAGTGTGGAGTGGATAAGTAATAAGAGACAAA

[REDACTED]

SEQ ID NO: 9911

CAATCATCCACAAGTATTGGTAACTTGGGAAGGCACAAGTTTGTAAACAAACCTTATGTTCTGCATTCTA

CCCCC

SEQ ID NO: 9911

CCCCC

AAATAGTGAAAGTTTCCCAATTGCTGTGAAGGCCCGTGCGGGTGCTTTGNNNNNNNNNNNNNNNNNNNNN

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SEQ ID NO: 9911

NNNNNNATCAATCCACAACCAAGATATTTACGAGCCATTACTCAGACATACAGATGTTTGGCTGGTGAG

SEQ ID NO: 9911

TTTCATGCA TCGACAACCATAGAT TGA AAAA (GAAAAAAT) GTA ACTAGACACCCACCTGTTCAT CCTCTGACA
350

420

420

420 ATGGGTACACATCACCAAATAATGTCACTCTTGCAATTCGATAAGCCACTCCATCCGGGTATCTGCCAGCC

490

490

490

560

560

CCGTGAACAACAAGGCTGCATCTAGTTTCAATTC AAGAGATTTCGTGTGTGGATGGCCAGCGGTGAAAAACA

630

630

630

700

700

GACTCAAAACATTAATTGTATCATTTATTAATTTGGTATTGCCTTCAATACACAGACACAAAAACACTCCTA
700

770

770

770 CATGTTACACCTCTTAATGAAATTAAAGAAAAGAGGGGAAAAAACCGCTTTGACTTCACCTCCTACTATTCC

840

840

TTCCACAAAAATCAAATCAAGTTAAATTTTACACTTAGAGGAGTTATGACTAAGAACTAATTGTGCGAC

910

910

TTGGCAAATAATTAAACTCATACTCTGAGAAAAAAATTAGCGTGCACAACAAAAGAAGACACTGTAGAACTAC

980

980

GAGCAGCTTAAACAAGAAAAGATAGACTGAGTGACTTANGCCCCATCCGATCAGGTGCAAAATCTACCAATC
980

1050

1050

AGCCAAATGGGTACCCCTTCCCTGGGGTGGTGCATTTGGACATCACTGTGCACAGATGAGCAAACCTAGC
1050

1120

1120

1120 CTTGAATCATAAAAACACAACAAGACAAACACAGATAAAGAACTTAAATAATCTTTTCTCATTGAAGTAAA

1190

1190

AAGGAAAGATACAAACCATCTAAAGSACAAACCCCTTTACCTGTTCCAACAAGTTCGGTACAGCTAAAGC
1190

1260

1260

AGGCCGAGCTTAAAGCATGAGCTGATGTATTTATTTTGAACACCACCAGATATTGGAATTC1AAAAAGCCCA
1260

1330

1330

GCFCGATTTCCTCCACCACCCCTGAGGATGTGCAAGAGATGCCTCCACATCGATTACACTATGAGAAGTTT
1330

1400

1400

CACCAATGCTATTACTCCCGAGCTTTTCCTTCACACAACATTACAAGCTATTAATCTCTATGTCAAAGCA
1400

1470

1470

AACCAATACCTGGTATCATCTTTCTGGCTAATCTAAGATTGATTCTACACAAACTCTGCATCAAAACCAA
1470

1540

1540

AGTTTTCGATCCAAAATTGTAATTTTCTTGTGAATTTTGCATACCCAAAACAAAAGTTATAATCTTTAG
1540

1610

1610

TTGAAATTATTTCATCACAAAGACACAGAGAAAAAGTACCTGTGATAAAGAGAAGATATCCCCAGGAAAAAAA
1610

CCGCCC
1680

1680

CCAAACCGATTATTATCTTCAGTTTAACTTGCGCTCTCGTTACGTAAGAGAGCTTGTATACGAAGCCCGT
1680

1750

1750

GACTTGATCATTACTGAGTCTTAGCTTCGGAATTGCGTTTGGGTAGCGAATTACAAAACCAACACGA
1750

1820

1820

AGACATTTATGAAGTGGGCAGCTGAGATTTGAGGAGAGGCTTAGTCTGTAAATTGGGTGTTGTGTGTTGAA
1820

1890

1890

TTGAAGAGAGCTTCCATGCTGGATGAGAAATAAGATTCTTGGGTTGAAGAGTCTTCTGATCTTTCACATATGGG

1960

1960

AGA TGC TTT AGG GTG TTT TGT TTA AAA GTAG CTT TTA TAA AATTAGGA CTTTTCAGAGTAGGGTTTGTATAA
1960

2030

2030

CACACACATACATATAAGGTTTTCCTTTTCTTTTGGCTTTTTTTTTATAGTTGGATTACGATTACTTT
2030

2100

2100

TGTCCTTCGGAATTACTTTTGATCTGATTTTCTATTCTCTTTTGTTTTCTTTTGATGTTTGATAATAACGA
2100

2170

2170

TTTTCCTGCGAAATAAGAAAAATCTGCTCTTTTAAATTTTACAATTTTATTGATAATAACATAATATTCTT
2170

2240

2240

AGAAA TATCTTTGTTTAAAAAAATTGGAAGAAAAGATTTCATCTCATCTCAAAAGAACCTGATAA
2240

2310

2310

GACTATTGGATTACCATTATTCGGTTCTTAAATCTTCTTACTGTTGATTAAAAAAATTAAATCTCCTCT
2310

2380

2380

2380

2450

2450

TC AATGACACAAACTATAATTAAAGGCACTAAACACTAAATGTCTTAATTTGCATAATGCGGGACCCATGT
2450

2520

2520

CAATAATAATTCTCAAAAGTTTTCGTTTTCAGCCCATCCTTCCTCCGAATCCACGCGCCACCGTCTAAGC
2520

2590

2590

2590

2660

2660

CTTCTACTTTCTTTAAATTCCTGCACTCTGGTCGTGTTCTTAACGCCGAACCAAAACGCCGCCGCTAAGAA
2660

2730

2730

CACTCTCTTCGTCCTCTTGGGTTCTTCTCCACAGCCAAAGCCAAAGACGCATATGAAACACACAGCGTTT
2730

2800

2800

GTAAATCCCCTTTAGTCTTAATTTACACCAATTTACAAAATGCCATCCGCCACCGTAACCGCAA

2870

2870

2870

2940

2940

CGAGCTTGGAGACACAGTCAAGAGACCAACAGCAAGAAAGAACGACGATTCTGAACCAATATGTTGTTCTGT
2940

SEQ ID NO: 5272

CCGAGGCGCCAGGAAGAGAGGACGAGAAACGAAATTTTGAGTAAGAGATTGCAATTTGGGCAATGACAC
3010

SEQ ID NO: 9911

CCGAGGCGCCAGGAAGAGAGGACGAGAAACGAAATTTTGAGTAAGAGATTGCAATTTGGGCAATGACAC
3010

Consensus

GGAGGCGCCAGGAAGAGAGGACGAGAAACGAAATTTTGAGTAAGAGATTGCAATTTGGGCAATGACAC
3010

SEQ ID NO: 5272

CCGAGGCGCCAGGAAGAGAGGACGAGAAACGAAATTTTGAGTAAGAGATTGCAATTTGGGCAATGACAC
3080

SEQ ID NO: 9911

CCGAGGCGCCAGGAAGAGAGGACGAGAAACGAAATTTTGAGTAAGAGATTGCAATTTGGGCAATGACAC
3080

Consensus

GCCGGGAAATGACGAGCGAAGAAGAAATTTGAGGCGATGGAACCTAGCGTCACAAGAACGGCAGAGGAAGGC
3080

SEQ ID NO: 5272

CCGAGGCGCCAGGAAGAGAGGACGAGAAACGAAATTTTGAGTAAGAGATTGCAATTTGGGCAATGACAC
3150

SEQ ID NO: 9911

CCGAGGCGCCAGGAAGAGAGGACGAGAAACGAAATTTTGAGTAAGAGATTGCAATTTGGGCAATGACAC
3150

Consensus

AGACTTCGCGCGCCACAATGAGATCAATTTGCGCACCACAAAAGCTCGCAAAAAGCTCACCAATTGAGTCGATC
3150

SEQ ID NO: 5272

CCGAGGCGCCAGGAAGAGAGGACGAGAAACGAAATTTTGAGTAAGAGATTGCAATTTGGGCAATGACAC
3220

SEQ ID NO: 9911

CCGAGGCGCCAGGAAGAGAGGACGAGAAACGAAATTTTGAGTAAGAGATTGCAATTTGGGCAATGACAC
3220

Consensus

TCCTCTGATCACCAGAAAAGAAATGGAAGAAGATTGGTTTGGAATGATGATGCTGGGAAAGAGAGATTTTAA
3220

SEQ ID NO: 5272

CCGAGGCGCCAGGAAGAGAGGACGAGAAACGAAATTTTGAGTAAGAGATTGCAATTTGGGCAATGACAC
3290

SEQ ID NO: 9911

CCGAGGCGCCAGGAAGAGAGGACGAGAAACGAAATTTTGAGTAAGAGATTGCAATTTGGGCAATGACAC
3290

GAAGACATCTAAATGATTGACACAGAGAAAGAGCGGTGGAGTTTTTATGGTTCATGGTTGATGAGAGTAG

[REDACTED]

[REDACTED]

TCTCTCTCCACAGCTCCACACATCAAGAGAACTTACATGAGCCATAA'TTT'TTTAGGGAAAATGAAAATGAATGC

TGTTTTCGACGAATTGGAGAGAAATGACGTCCTCTGAGAGGTTTGTGAGGCTGGTGAGATTATGTGGTCATTTTTTA

AAAC'TA'TTAC'ACTAGCGGC(AA)T(A)'TCTTCTTCC'TTTGTGTGACGTGGAGATTTAGTCAACACTAA

TGTCCTTTCAGAGACTTGCTCTCAATTGCAAAATTGCTTCTTCTTCTTTTCTTGGGTGCTTCCATTACATTT

3640

SEQ ID NO: 9911

CTTCGCAATTGTTACAGTCCTTTTATTAACCTTTATACATTGATCTTTTGTGGAATACAAAACAGAAGA

3640

Consensus

CTTCGCAATTGTTACAGTCCTTTTATTAACCTTTATACATTGATCTTTTGTGGAATACAAAACAGAAGA

3640

SEQ ID NO: 5272

CTTCGCAATTGTTACAGTCCTTTTATTAACCTTTATACATTGATCTTTTGTGGAATACAAAACAGAAGA

3710

SEQ ID NO: 9911

CTTCGCAATTGTTACAGTCCTTTTATTAACCTTTATACATTGATCTTTTGTGGAATACAAAACAGAAGA

3710

Consensus

TAATACCTCTTATTTATATCTAAGGATTAAGGATACAAAACACAAGTGTAACCTGTGTGAACCTGTT

3710

SEQ ID NO: 5272

TAATACCTCTTATTTATATCTAAGGATTAAGGATACAAAACACAAGTGTAACCTGTGTGAACCTGTT

3780

SEQ ID NO: 9911

TAATACCTCTTATTTATATCTAAGGATTAAGGATACAAAACACAAGTGTAACCTGTGTGAACCTGTT

3780

Consensus

TGGGTTCTATCCGAACCTAGTACAACTATCTATATCTTGAAATCTTCCAAAATGCTTCTTAAAT

3780

SEQ ID NO: 5272

TGGGTTCTATCCGAACCTAGTACAACTATCTATATCTTGAAATCTTCCAAAATGCTTCTTAAAT

3850

SEQ ID NO: 9911

TGGGTTCTATCCGAACCTAGTACAACTATCTATATCTTGAAATCTTCCAAAATGCTTCTTAAAT

3850

Consensus

AAATATCTCTTTGAATATCTAATCTAAATCAAATAGCTCTGTTAAGATATATCCATAGAGCCCTCCTAC

3850

SEQ ID NO: 5272

AAATATCTCTTTGAATATCTAATCTAAATCAAATAGCTCTGTTAAGATATATCCATAGAGCCCTCCTAC

3920

SEQ ID NO: 9911

AAATATCTCTTTGAATATCTAATCTAAATCAAATAGCTCTGTTAAGATATATCCATAGAGCCCTCCTAC

3920

Consensus

GAATCTACCTGAGACCTCTCCATACAGTTTATCTTTTGTGATCCGACATAATGCTCTGGCGTATTC

3920

SEQ ID NO: 5272 [REDACTED] 3941
SEQ ID NO: 9911 [REDACTED] 3941

Consensus [REDACTED] 3941
